

REMARKS

Reconsideration of the present application is respectfully requested. Claims 11, 12, 31, 32, 50, 51 and 58 were previously canceled. In this amendment, claims 52-57 have been canceled, and claims 1, 9, 13, 20, 34, 39, 48, 49 and 52 have been amended. Figures 6 and 7 have been added to the drawings, and the specification has been amended to add appropriate references to those two figures. No new matter has been added.

Summary of Office Action

The drawings stand objected to under 37 C.F.R. 1.83(a). Claims 1-10, 13-49 and 52-57 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 1-12 and 39-49 stand rejected under 35 U.S.C. § 103(a) based on U.S. Patent no. 6,779,095 of Selkirk et al. ("Selkirk") in view of U.S. Patent no. 5,850,565 of Wightman et al. ("Wightman"). Claims 13-19 and 52-57 were rejected as being anticipated by U.S. Patent no. 6,532,121 of Rust et al. ("Rust"). Claims 20 and 34 stand rejected under 35 U.S.C. § 103(a) based on U.S. Patent no. 6,157,743 of Goris et al. ("Goris") in view of Selkirk.

Drawing Changes

The drawings stand objected to under 37 C.F.R. 1.83(a). The Examiner states that the drawings as filed do not show every feature of the invention specified in the claims. (Office Action, page 2.)

Figures 6 and 7 have been added to the drawings. No new matter has been added. The subject matter of Figures 6 and 7 is fully supported by the original description and claims. Applicant respectfully submits that the objection has therefore been overcome.

Specification

The specification has been amended to include appropriate discussion of new Figures 6 and 7. No new matter has been added. The subject matter of Figures 6 and 7 is fully supported by the original description and claims.

Section 101 Rejections

Claims 1-10, 13-49 and 52-57 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicants respectfully submit that the amendments to the independent claims overcome the rejection. For example, claim 1 has been amended to recite, “during a logical mirroring operation, sending the set of data in its entirety from said data storage system to a remote data storage system at a mirror site, . . . *to enable the remote data storage system to update the mirror copy of the set of data*” (emphasis added). As such, claim 1 now more clearly recites a practical application. Therefore, the rejection is believed to have been overcome as to claim 1.

Similar amendments have been made to the other independent claims. Therefore, the rejection is believed to have been overcome as to all remaining claims.

Prior Art Rejections

Applicants respectfully traverse the rejections. The claim amendments are *not* made in response to the prior art rejections. No such amendments are believed to be necessary for such purpose, as explained below.

Independent claims 1 and 39

Claims 1-12 and 39-49 stand rejected under 35 U.S.C. § 103(a) based on U.S. Selkirk in view of Wightman. (The Office Action identifies the secondary reference as "Brown", however, the patent number of the secondary reference corresponds to Wightman.) The Examiner admits that Selkirk does not disclose "defining a compression group corresponding to the set of data, compressing the set of data so that the set of data occupies a smaller number of the subset in the first number, storing a predetermined value in the corresponding entry of the compression group, the predetermined value being indicative that corresponding data is compressed." (Office Action, pages 14-15.) However, the Examiner contends that Wightman discloses such features and that would be obvious to combine the teachings of Wightman with those of Selkirk to produce the present invention.

Applicants respectfully traverse. One of the requirements to establish a *prima facie* case of obviousness is that the cited combination of prior art references must teach or suggest *all of the claim limitations*. *In re Vaeck*, 947 F.2d 488, 20 USPQ.2d 1438 (Fed. Cir. 1991); MPEP § 706.02(j) (emphasis added). In this regard, the Examiner's characterization of the cited art is inaccurate with respect to both Selkirk and Wightman.

Claim 1 recites, “during a logical mirroring operation, sending the set of data in its entirety from said data storage system *to a remote data storage system* at a mirror site.” Neither Selkirk nor Wightman discloses or suggests this functionality,. The Examiner incorrectly cites Selkirk as disclosing this functionality at col. 7, lines 23-32, col. 1, lines 55-57, col. 19, lines 11-22, and Fig. 3 (Office Action, pages 14 and 21). Selkirk does disclose that a storage subsystem 318 may be located on a network (Fig. 3). However, that is no suggestion of, during a logical mirroring operation, sending a set of data from said data storage system *to a remote data storage system* at a mirror site. Nor is there any such disclosure or suggestion anywhere else in Selkirk or in Wightman. For at least this reason, therefore, no combination of Selkirk and Wightman can produce all of the limitations of claim 1.

The Examiner further contends that Selkirk teaches, “at a consistency point, sending the set of data in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the set of data [col 7, line 23-32], any one or more of the subsets of the set of data has been modified since the prior consistency point [col 12, line 23-29]” (Office Action, page 14). However, the Examiner does not accurately track Applicants’ claim language (including language which has not been amended). Claim 1 recites (as amended), “during a logical mirroring operation, sending the set of data . . . if the set of data has been compressed **and** any one or more of the subsets of the set of data has been modified.” The Examiner appears to ignore the “if” clause in this claim limitation, which states the condition under which the recited operation is performed. There is no disclosure or suggestion in Selkirk, of “during a logical mirroring operation, sending the set of data in its entirety from said data storage system to a remote data

storage system at a mirror site, for use in a mirror copy of the set of data, *if* the set of data has been compressed *and* any one or more of the subsets of the set of data has been modified since a prior logical mirroring operation . . .” Nor is any such disclosure found in Wightman.

Further regarding this claim limitation, the Examiner-cited disclosure at col. 12, lines 23-29 of Selkirk has no apparent relationship to the cited disclosure at col. 7, line 23-32, and these sections have little or no apparent relevance to the claim limitation in question. Those two cited sections in Selkirk, which are unrelated and separated by several columns of text, cannot reasonably be read onto the particular claim limitation in question, which recites a specific operation. For this additional reason, therefore, no combination of Selkirk and Wightman can produce all of the limitations of claim 1.

The Examiner's characterization of Wightman is also an accurate. The Examiner contends that Wightman discloses, *inter alia*, “storing a predetermined value in the corresponding entry of the compression group, the predetermined value being indicative that corresponding data is compressed,” at col. 6, lines 5-14 and 62-66. (Office Action, page 15). However, the Examiner appears to be ignoring the phrase, “for each of the subsets which does *not* contain compressed data after said compressing, . . .” (emphasis added). There is no disclosure or suggestion, in Wightman or in Selkirk, of, “for each of the subsets which does *not* contain compressed data after said compressing, storing a predetermined value in the corresponding entry of the compression group, the predetermined value being indicative that corresponding data is compressed” (emphasis added). For this additional reason, therefore, no combination of Selkirk and Wightman produces all of the limitations of claim 1.

For the above-mentioned reasons, the rejection is improper as to claim 1 and all claims which depend on it and should be withdrawn. Claim 39 includes limitations similar to those in claim 1 discussed above. For similar reasons, therefore, the rejection is also improper as to claim 39 and all claims which depend on it.

Independent claim 13

Claims 13-19 and 52-57 were rejected as being anticipated by Rust. Applicants respectfully traverse. Rust fails to disclose or suggest, per claim 13:

during a logical mirroring operation, . . .
if any data represented by said one of the compression groups has been modified since a prior logical mirroring operation, sending said one of the compression groups in its entirety **from the data storage system to a remote data storage system at a mirror site**, to enable the remote data storage system to update a mirror copy of the file. (Emphasis added.)

In particular, Rust fails to disclose or suggest sending a compression group *from the data storage system to a remote data storage system at a mirror site* during a logical mirroring operation, much less doing so under the specific condition recited in claim 13 (i.e., “if any data represented by said one of the compression groups has been modified since a prior logical mirroring operation”). For at least this reason, claim 13 is not anticipated by Rust, nor it is the claimed invention obvious in view of Rust.

Independent claims 20 and 34

Claims 20 and 34 stand rejected under 35 U.S.C. § 103(a) based on Goris in view of Selkirk. Applicants respectfully traverse.

See Applicants' above remarks regarding the shortcomings of Selkirk's disclosure as applied to Applicants' claims.

In addition, the Examiner incorrectly contends that Goris discloses, per claim 20, "for each of the number of consecutive blocks which does not contain compressed data after said compressing, storing a predetermined block number in the corresponding entry of the compression group, the predetermined block number being indicative that corresponding data is compressed and *represented elsewhere in the compression group*" (emphasis added). Specifically, the Examiner cites Goris at figure 4, element 400; col. 7, lines 57-67; col. 8, lines 1-2; and figures 4 and 5, as allegedly disclosing this functionality. (Office Action, page 20.) That is incorrect. There is no disclosure, and the cited sections or elsewhere in Goris of, for each of the number of consecutive blocks which does *not* contain compressed data after said compressing, storing a predetermined block number in the corresponding entry of the compression group, the predetermined block number being indicative that corresponding data is compressed and *represented elsewhere in the compression group*. Likewise, no such disclosure is found in Selkirk either.

Therefore, no combination of Goris and Selkirk can produce all of limitations of claim 20. Accordingly, claim 20 and all claims which depend on it are patentable over the cited art. Claim 34 include similar limitations to those in claim 20 and is, therefore, patentable over the cited art for similar reasons.

Dependent Claims

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.


Conclusion

For the foregoing reasons, the present application is believed to be in condition for allowance, and such action is earnestly requested.

If there are any additional charges/credits, please charge/credit our deposit account no. 02-2666.

Respectfully submitted,
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Attachments: Figures 6 and 7 as discussed herein